

WHAT IS CLAIMED IS:

1. A power controlling device in a mobile communication system, comprising:

5 a frame error detector for detecting an error from a frame of a predetermined length and for generating an error signal indicating whether an error has been generated;

10 a closed-loop power controller for comparing a threshold with a signal-to-noise ratio (SNR) of each power control group (PCG) in a plurality of periods of a frame and for generating power control information according to the comparison result;

15 an outer-loop power controller for increasing the threshold to generate power control information commanding power increase in response to an error signal indicating the existence of a frame error and for decreasing the threshold to generate power control information commanding power decrease in response to an error signal indicating the absence of a frame error; and

20 an offset controlling unit connected to the outer-loop power controller, for receiving gating information about gated transmission of data in a frame at a predetermined rate and for generating an offset signal indicating an offset corresponding to a changed gating rate if the gating rate is changed.

2. The power controlling device of claim 1, wherein the offset controlling unit includes:

25 an offset table storage for storing offsets with respect to variations in gating rates according to state transition and variations in gating rates in the same state; and

an offset controller for receiving state transition and gating rate information from a higher layer, for reading an offset corresponding to the received information,

and for outputting the offset to the outer-loop power controller.

3. A mobile communication system comprising:

5 a transmission power controlling circuit for receiving a data signal to transmit and power control information, for controlling a gain of the data signal based on the power control information, thereby controlling the transmission power of the data signal; and

10 an offset controlling unit connected to the transmission power controlling circuit, for receiving a gating information signal, and for outputting an offset signal indicating a gain value for compensating the transmission power according to the gating rate;

wherein the transmission power controlling circuit controls the transmission power of the data signal by adding the offset to or subtracting the offset from the gain value.

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15 4. The mobile communication system of claim 3, wherein the offset controlling unit includes:

an offset table storage for storing offsets with respect to variations in gating rates according to state transition and variations in gating rates in a same state; and

20 an offset controller for receiving state transition and gating rate information from a higher layer, for reading an offset corresponding to the received information, and for outputting the offset to the outer-loop power controller.

25 5. A receiving device in a CDMA (Code Division Multiple Access) mobile communication system, which receives information about a pre-transition gating rate and a post-transition gating rate from a base station upon state transition, comprising:

an offset table storage for storing offsets according to state transitions;

an offset controller for receiving state transition information through a higher layer message, and for reading an offset corresponding to the state transition information from the offset table storage; and

5 an outer-loop power controller for storing a previous threshold, for performing an outer-loop power control operation by adding the previous threshold to the offset received from the offset controller, and for outputting a threshold.

6. The receiving device of claim 5, further comprising:

10 a closed-loop power controller for receiving the threshold and for performing a closed-loop power control operation.

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7. A receiving device in a CDMA mobile communication system, which receives information from a base station upon a state transition, said
15 information including pre-transition and post-transition gating rate information and an offset table, said offset table listing offsets versus state transitions, comprising:

an offset table storage for storing an offset table;

an offset controller for receiving the offset table through a higher layer message, for storing the offset table in the offset table storage, for receiving state
20 transition information, and for reading an offset corresponding to the state transition information from the offset table storage; and

an outer-loop power controller for storing a previous threshold, for performing an outer-loop power control operation by adding the previous threshold to the offset received from the offset controller, and for outputting a threshold.

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8. The receiving device of claim 7, further comprising:

a closed-loop power controller for receiving the threshold and for performing

a closed-loop power control operation.

9. A receiving device in a CDMA (Code Division Multiple Access) mobile communication system, which receives an offset with respect to a pre-transition gating rate and a post-transition gating rate from a base station upon state transition, comprising:

an offset controller for detecting and receiving an offset through a higher layer message and for outputting the offset; and

an outer-loop power controller for storing a previous threshold, for performing an outer-loop power control operation by adding the previous threshold to the offset received from the offset controller, and for outputting a threshold.

10. The receiving device of claim 9, further comprising:

a closed-loop power controller for receiving the threshold and for performing a closed-loop power control operation.

11. A power controlling method in a CDMA (Code Division Multiple Access) mobile communication system in which information is received from a base station upon a state transition, said information including pre-transition and post-transition gating rate information and an offset table, said offset table having offsets versus state transitions, comprising the steps of:

receiving the offset table through a higher layer message;

storing, by an offset controller, the offset table in an offset table storage;

receiving state transition information through the higher layer message;

reading, by the offset controller, an offset corresponding to the state transition from the offset table;

performing an outer-loop power control operation by adding a previous

threshold to the offset received from the offset controller; and
outputting, by an outer-loop power controller, a threshold.

- 5 12. The power controlling method of claim 11, further comprising the step of:
performing, by a closed-loop power controller, a closed-loop power control operation according to the threshold.

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- 10 13. A power controlling method in a CDMA (Code Division Multiple Access) mobile communication system in which an offset with respect to a pre-transition gating rate and a post-transition gating rate is received from a base station upon state transition, comprising the steps of:

- 15 detecting, by an offset controller, an offset in a higher layer message;
outputting, by an offset controller, the offset;
performing an outer-loop power control operation by adding a previous threshold to the offset received from the offset controller; and
outputting, by an outer-loop power controller, a threshold.

- 20 14. The power controlling method of claim 12, further comprising the step of:
performing, by a closed-loop power controller, a closed-loop power control operation according to the threshold.